Product Catalog

MULTIMEDIA PROCESSING AND SIGNALING

(VoIP & PSTN convergence communications)

Synway

CORPORATE INTRODUCTION

Synway specializes in designing scalable and highly available hardware/software building blocks for use in media processing and signaling applications, including SIP-based and TDM-based IVR, call center, recording, unified messaging and value-added service (VAS) in PSTN and IP networks. Synway's products feature rich media processing resources including fax, conferencing, Codecs, echo cancellation and call control with an array of signaling support for SIP, H.323, SS7 packets, ISDN, CAS, etc.

Beyond cost advantage and standard components, service providers and applications providers highly recognize Synway's distinguishing strength in delivering a broad range of high performance, tailored media processing and signaling solution. With well-organized Value Maximum Support System (VMS), Synway's professionals and engineers continue to optimize technical support service and technologies for next-generation communications solutions.

AT@GLANCE

Synway's Multimedia Processing & Signaling Series

Synway's multimedia processing and signaling family, consisted of Synway's SHN(IP), SHD(digital) and SHT(analog), is specifically designed for both IP and PSTN networks. Built on Synway's technologies, SHN, SHD and SHT are mutually independent as well as closely interconnected architectures and can maximize investment and sustainability for service providers and applications developers in changeable environments. Combining the three products together, developers can deliver cost effective, flexible, feature-rich, high-compatibility solutions in PSTN and IP networks.

Product / Features	Media Processing and Signaling Family		
	SHD	SHT	SHN
Basic Description	Cover high-profile CTI applications,conferencing, voice mail, unified messaging , etc.	Cover trunking, station, record applications, modular design for custom solutions	Widely used for IP telephony network applications and provides call centers with voice over IP solutions
Network Interface	1~16 E1/T1	2~16 LSI	NIC
Form Factor	PCI/cPCI/PCIe*	PCI/cPCI/PCI-X/USB/PCIe*	PCI/PCIe*
Maxi.Ports	480 ports(E1)/ 384 ports(T1)	16 ports, configurable	120 Ports configurable
CT Bus	H.100/H.110	H.100/H.110	H.100
Voice Processing	G.711/GSM/MP3/ADPCM	G.711/GSM/MP3/ADPCM	G.711/GSM/G.729A/ G.723*/ADPCM
Conferencing	Built-in	Built-in	Built-in
Maxi. Fax Resource	80, configurable	12, configurable	120, configurable
Signaling Capability	ISDN/SS7/CAS (96 SS7 LINKS)	Analog Loopstart	SIP/H.323/MGCP

Customizability

In the hypercompetitive environment, service providers and operators must continually lower subscription cost for standard services, such as voicemail, and simultaneously offer subscribers more value-added functionalities, such as faxmail, CRBT, etc. Synway, with world-class technical team, can provide Telco solution developers with enhanced and customized architectures to differentiate.

With an expandable suite of value-added features, Synway's integrated media and signaling product enables Telco solution providers to introduce more cost effective, innovative services to meet carriers and subscribers' today or future network needs.

Interoperability

Interoperated with an array of TDM/IP switchers and networks, Synway's product portfolios, including analog, digital and VoIP media processing and access platforms, share the same application interface and media processing capabilities, and can be mixed together or used alone for highly scalable and available applications and value-added services in PSTN and IP networks. All of Synway-component-based applications or services are protocol-independent (SIP or SS7) and can be migrated among all of Synway's portfolios.

Synway's media processing and signaling architectures incorporate a full suite of protocols, including SIP, SS7, ISDN, CAS, and Telco solution providers can depend on Synway's portfolios to easily deliver gateway functionality and a host of next-generation features. Sustainability and interoperability of Synway's products protect initial investment of service providers and application developers.

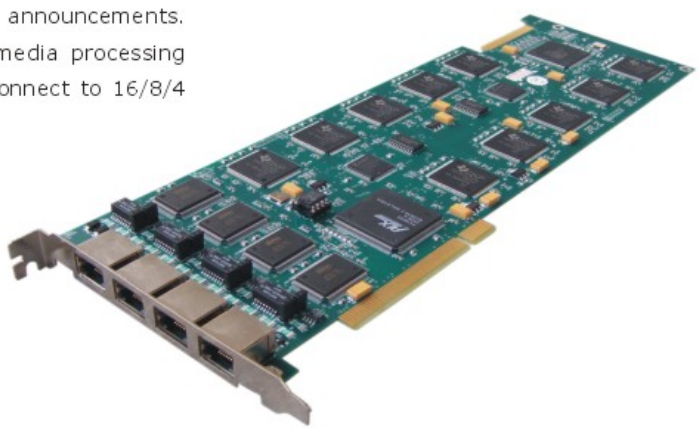
SHD

Digital Media Processing & Signaling

Synway's broad range of digital products incorporate an array of signaling protocols and rich media processing capabilities, and provide service providers and application developers with matchless cost, high performance ALL-IN-ONE hardware platform easily used for all of CTI applications. Its enhanced built-in resources include conferencing, fax, compression protocols, echo cancellation and call control, which are powered by innovative technologies and expertise accumulated in serving leading service providers, applications developers, telecom equipment providers and OEMs worldwide.

Designed specifically to offer high capacity, highly available solutions, Synway's proven high-density hardware combines telco-grade reliability and high performance, and has been deployed in a new range of applications, including prepaid card processing, CRBT, conferencing, and network announcements. Single high-capacity digital media processing and signaling platform can connect to 16/8/4 E1/T1 software-selectable trunks and support up to 96 SS7 signaling links. In terms of traffic profile, application developers can deploy application, with signaling and media processing capability for 1920 concurrent subscribers in single system.

In addition to high availability and scalability, Synway's media processing and signaling hardware platform offers matchless cost advantage for service providers and application developers to deploy high performance converging multimedia applications in the changeable environment. Coupled with years of technical support expertise, this hardware platform helps developers maximize value.



Features	Benefits
ALL-IN-ONE architecture of integrated signaling and multimedia processing	Integrate media processing and signaling built on in-house DSP architectures, and support all of multimedia applications, such as IVR, call center, fax and conferencing, and other highly available solution architectures
Rich media processing: conferencing, compression, fax, echo cancellation, call control, etc	Support for enhanced multimedia processing resources, including conferencing, IVR, fax, compression, echo canceller, call control , help developers develop flexible feature-rich applications
Selectable signaling protocols: CAS, ISDN PRI, SS7(ISUP/TUP/MTP/TCAP)	Offer robust signaling technologies, including SS7(MTP1-3, ISUP, TCAP, TUP), ISDN PRI and CAS for service provider and applications developer to develop and deploy high capability, high performance and highly available enhanced services in PSTN and PLMN networks
Configurable SS7 link capacity and inherently high signaling throughput	Built-in SS7 capability is an integrated part of Synway's proven, cost effective PSTN series, and no independent SS7 server needs to implemente high-capacity 96 SS7 links
Universal user-friendly SHCTI API supports for a range of calling features	Unified API architecture minimizes efforts on application development and deployment, and PSTN-based or SIP-based applications can be migrated among all of Synway's hardware platforms
Optional form factor: PCI, compact PCI, PCI-X, PCI-express* interface	Support existing or next-generation form factor of network infrastructure, server and chassis, with no need to change application programming interfaces
Global approval by service provider, application developer and system integrator	Broadly deployed into large-scale call center application, value-add service, unified messaging solution by world-class application developers and service providers
Scalable and upgradeable from 1 to 16 E1/T1 trunks per slot, 64E1/T1 per system	Cost effective, scalable and upgradeable hardware for a broad range of applications, and specifically designed to fulfill demands in high capacity, highly available and redundant solution architecture.

Technical specifications

PRODUCT MODELS
Available in website www.synway.cn

HARDWARE SYSTEM REQUIREMENTS
Pentium 3 or equivalent
1 GHz or better PCI Bus, Rev. 2.2, 33Mhz, 32Bit/cPCI

ENVIRONMENTAL CONDITIONS
Operating temperature: 0C to +55C
Storage temperature: -20C to +85C
Humidity: 8% to 90% non-condensing
Storage humidity: 8% to 90% non-condensing

TECHNICAL SPECIFICATIONS
Max boards per system: up to 16 units
Max ports per system: up to 1920 ports
Resource sharing Bus: H.100/H.110
Clocking: Master/Slave

POWER REQUIREMENTS
+5 VDC: 1.5A
+3.3VDC: 2.5A (cPCI only)
+12VDC: 0.1A ((cPCI only)

AUDIO SIGNAL
Receive range: -68 dBm to + 3 dBm
Input gain control: +20 to -20 dB
Silence detection: programmable from API
Automatic Gain Control (AGC): programmable from API
Activity detection: programmable from API
Frequency response: 300 - 3400 Hz (+/- 3dB)

AUDIO ENCODING
16Bit PCM 128Kbps
8Bit PCM 64Kbps
A-Law: 64Kbps
μ -Law: 64Kbps
VOX: 32Kbps
ADPCM: 32Kbps
GSM: 13.6Kbps
MP3: 8Kbps

OPERATING SYSTEM
Windows 2000/2003/XP/VISTA and more
Linux RedHat/SUSE/Cetos/FC and more

PHYSICAL CHARACTERISTICS
Form factor: Full-size PCI card/6U cPCI/PCIe*

E1/T1 INTERFACE
Line Interface:G.703 75/120Ω
Receive clock rate: 2.048 +/- 175ppm
Transmit clock: recovered RX clock or 50 ppm
Input level: 3.2V down to 0.45 V
Framing: basic G.704, CRC-4
Line coding: AMI, HDB3
Signaling protocol: SS7/ISDN/CAS
Loss of signal detection: per ITU-T G.775
Alarm detection and integration: LOS, LOSMF, TS16, CRC, and Yellow
Binary sequence detector: per ITU-T 0.151
Connectors: RJ-48C/T connectors

TONE DETECTION
DTMF digits: 0 - 9, *, #, A, B, C, D
Dynamic range: -38 dBm to 0 dBm
Minimum tone detection: 40 ms
Fax tone detection: 1100/2200Hz
Calling process tone detection: programmable*4
FSK receiver: 1200bps
FSK/calling tone generator: programmable calling tone generation.
FSK sender: 300-2400bps(programmable)

SS7/ISDN/CAS PROTOCOLS
ISDN PRI
Q.SIG
DSS1
SS7 (14/24bit)
MF R2
DTMF CAS
LINE SIDE

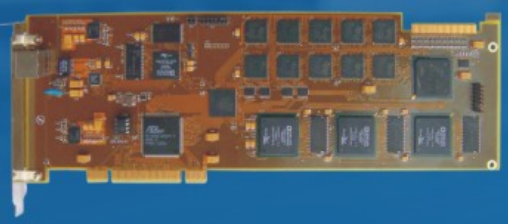
SAFETY AND CERTIFICATIONS
Lightning: level 4
Certificates: FCC & CE & AS/NZS CISPR
Emission: FCC Part 15 Class A & Class B
Emission: EN55022
Emission: AS/NZS CISPR 22:2004 Class B
Immunity: EN55044
Immunity: AS/NZS CISPR 24:2002

SHN

VoIP Media Processing & Signaling

With VOIP being an integral part of modern communications technologies, many application developers have been introducing next-generation multimedia processing and signaling technologies to deliver cost effective, flexible, high performance IP-based services or applications. Extending mature PSTN technologies to IP architecture, Synway's SIP-based media processing hardware platform is specifically designed to deliver robust enabling architecture in pure IP environment or hybrid IP and PSTN networks for service providers and application developers.

Like Synway's PSTN architecture, Synway's IP hardware architectures incorporate high capability and high performance media processing resources, including echo cancellation, fax, conferencing, high compression protocols, and call control, which enable service providers and communications applications developers to rapidly deliver feature-rich IP-based services, including SIP media server, hosted call center, voice portal, IP messaging and gateway.



For pure IP-based service or applications, Synway's IP platform offers matchless cost efficiency, rich multimedia processing, SIP and H.323 signaling. Application developers can develop high-capability, size-optimized-for-value IP system, with NIC-based port densities up to 1920 ports in a single system. In the hybrid IP and PSTN networks, this platform inherits and shares API of Synway's PSTN series products, and simplifies development and deployment as developers can rapidly migrate their existing applications or services interfaced to Synway's PSTN series products to this IP architecture.

Features	Benefits
ALL-IN-ONE architecture of integrated SIP/H.323 signaling and multimedia processing	Help VoIP developers to integrate all cost effective, scalable, feature-rich IP telephony applications and value-added services in single box in IP networking environments.
Rich media processing: conferencing, compression, fax, echo cancellation, call control, etc	Support for enhanced multimedia processing resources, including conferencing, IVR, fax, compression, echo canceller, call control , help developers develop feature-rich applications, such as IVR, call center, conferencing, gateway, IP-PBX and other highly available solution architectures
Signaling protocols: SIP/H.323/MGCP	Offer robust SIP signaling technologies for service provider and applications developer to develop and deploy high capability, high performance and highly available enhanced services in PSTN and PLMN networks
Universal user-friendly SHCTI API supports for a range of calling features	Unified API architecture minimizes efforts on application development and deployment, and PSTN-based or SIP-based applications can be migrated among all of Synway's hardware platforms
Optional form factor: PCI, PCI-X*, PCI-express* interface	Support existing or next-generation form factor of network infrastructure, server or chassis without altering application programming interfaces
Global approval by service provider, application developer and system integrator	Deployed into large-scale call center application, value-add service, unified messaging solution by world-class application developers and service providers
Scalable and upgradeable up to 120 ports per slot, maximum 1920 ports per system	Cost effective and scalable hardware for a broad range of applications, and specifically designed to fulfill demands in high capacity, highly available and redundant system architecture.

Technical specifications

PRODUCT MODELS

Available in website www.synway.cn

HARDWARE SYSTEM REQUIREMENTS

Pentium 3 or equivalent

1 GHz or better PCI Bus, Rev. 2.2, 33Mhz, 32Bit/cPCI

ENVIRONMENTAL CONDITIONS

Operating temperature: 0C to +55C

Storage temperature: -20C to +85C

Humidity: 8% to 90% non-condensing

Storage humidity: 8% to 90% non-condensing

TECHNICAL SPECIFICATIONS

Max boards per system: up to 16

Max ports per system: up to 1200 ports

Resource sharing Bus: H.100, compatible with MVIP/SC/ST Bus

Clocking: master/slave

POWER REQUIREMENTS

+5 VDC: 1.2A

INTERNET PROTOCOLS

SIP/H.323/MGCP

INTERNET INTERFACE

10/100 base-T ethernet

Up to 128msec echo cancellation

AUDIO SIGNAL

Receive range: -68 dBm to + 3 dBm

Input gain control: +20 to -20 dB

Silence detection: programmable from API

Automatic Gain Control (AGC): programmable from API

Activity detection: programmable from API

Frequency response: 300 – 3400 Hz (+/- 3dB)

AUDIO ENCODING

16Bit PCM 128Kbps & 8Bit PCM 64Kbps

A-Law: 64Kbps & μ-Law: 64Kbps

ADPCM: 32Kbps & G.723*

GSM: 13.6Kbps & G.729A: 8Kbps

OPERATING SYSTEM

Windows 2000/2003/XP/Server/VISTA and more

Linux RedHat/SUSE/Cetos/FC and more

TONE DETECTION

DTMF digits: 0 – 9, *, #, A, B, C, D

Dynamic range: -38 dBm to 0 dBm

Minimum tone detection: 40 ms

Fax tone detection: 1100/2200Hz

Calling process tone detection: programmable*4

SAFETY AND CERTIFICATIONS

Lightning: level 4

Certificates: FCC & CE & AS/NZS CISPR

Emission: FCC Part 15 Class A & Class B

Emission: EN55022

Emission: AS/NZS CISPR 22:2004 Class B

Immunity: EN55044

Immunity: AS/NZS CISPR 24:2002

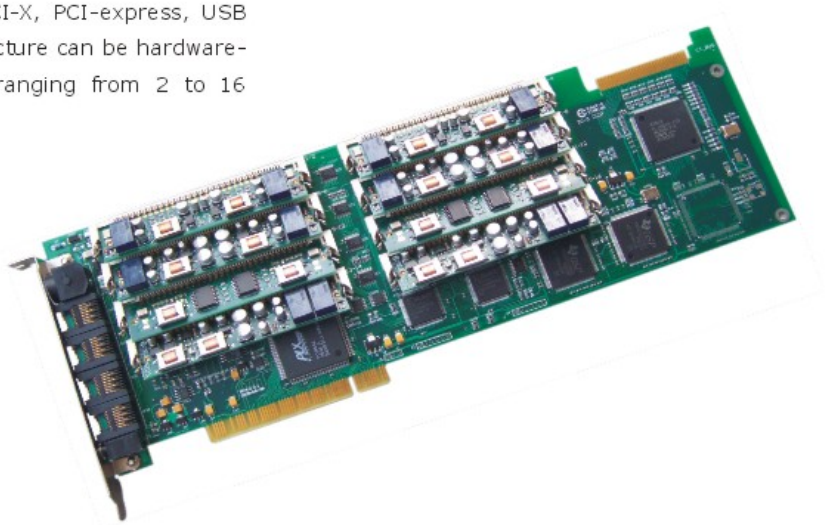
SHT

Analog Media Processing & Signaling

Built on mature voice processing technology in analog interface network, Synway's media processing and analog access hardware adapts hardware-configurable modular architecture for hybrid FXO and FXS telephony applications. A powerful and versatile analog access platform, it leverages on-board DSP capability to perform enhanced multimedia processing and standard telephony functionalities, such as DTMF generation, detection, playback, etc.

Synway's analog media processing architecture loads built-in conferencing, voice processing and optional fax resources, and can be used for small or mid-sized IVR, ACD, messaging, call center and other telephony systems. Compliant with PCI, PCI-X, PCI-express, USB interface, single architecture can be hardware-configured to density ranging from 2 to 16 FXO or FXS ports, and maximum density per system extends to 256 ports when 16 units are used together.

In addition to scalability and flexibility, this analog architecture brings matchless pricing points for application developers, and can act as an entrance point to develop more sophisticated, high capacity applications or services based on Synway's digital and IP media processing and signaling products due to its easy use and application-migratablilty.



Features	Benefits
ALL-IN-ONE architecture of integrated multimedia processing	Support for enhanced multimedia processing resources, including conferencing, IVR, fax, compression, echo canceller, call control, help developers develop feature-rich applications
Modular architecture for any hybrid FXO/FXS applications	Hardware-configurable to fit at the closeness into exact demand, scalable from 2 to 16 ports per slot, 256 per system
Optional Fax resources	Support 4, 8, 12-ports Group 3 fax in single board, perfect Error correction mode(ECM), high-speed transmission and reception
Built-in conferencing capability	Independent conferencing resources in each port, and support for conference monitoring and can configure as interactive conferencing system
Codecs protocols	Powerful voice processing capability; support G.711, MP3 (8kbps), GSM, ADPCM, and other Codecs for active recording, support playback WAV format
Universal user-friendly SynCTI API supports for a range of calling features	Unified API architecture minimizes efforts on application development and deployment, and PSTN-based or SIP-based applications can be migrated among all Synway's hardware platforms
Real-time monitoring	Conversation between any two parties in conferencing can be directly playout through on-board audio jack
Selectable form factor	USB, PCI, compact PCI, PCI-X, PCI-express* interface

Technical specifications

PRODUCT MODELS
Available in website www.synway.cn

HARDWARE SYSTEM REQUIREMENTS
Pentium 3 or equivalent
1 GHz or better PCI Bus, Rev. 2.2,

TECHNICAL SPECIFICATIONS
Max boards per system: any combination up to 16
Max ports per system: any combination up to 256
Resource sharing BUS: H.100/H.110(for SHT-16B boards)

PHYSICAL CHARACTERISTICS
Form factor: half/full-size PCI card/USB/6U cPCI/PCIe*

OPERATING SYSTEMS
Windows 2000/2003/XP/VISTA and more
Linux RedHat/SUSE/Cetos/FC and more

ENVIRONMENTAL CONDITIONS
Operating temperature: 0 to +55
Ilumidity: 8% to 90% non-condensing
Storage humidity: 8% to 90% non-condensing

TELEPHONY INTERFACE
Ring detection: 30Vrms(min),16 to 68Hz
Ringer equivalence number: <0.2/programmable
Voltage detection: -62V to+62V Step=0.5V
Caller ID: FSK/DTMF
Line connector: RJ11(4-8port)/RJ45(16port
Feed voltage): -48V
Max current: 35 mA per channel
Tone generator: programmable calling tone generation
Ring generator: 55Vrms 50/60Hz
Max user line Length: 5.5km

DTMF TONE DETECTION
DTMF digits: 0-9,*,#,A,B,C,D
Dynamicrange: -38 dBm to 0 dBm
Minimum tone detection: 40ms
Fax tone detection: 1100/2200Hz
Calling process tone detection: programmable*4

AUDIO ENCODING
16Bit PCM 128Kbps
8Bit PCM 64Kbps
A-Law: 64Kbps
μ-Law: 64Kbps
VOX: 32Kbps
ADPCM: 32Kbps
GSM: 13.6Kbps
MP3: 8Kbps

POWER REQUIREMENTS
(4 port USB)
+5VDC: 300mA
Watts(Max): 1.5W

(8 port)
+5VDC: 600mA
-12VDC: 80mA
+12VDC: 300mA
Watts(Max): 7.6W

(16 port)
+5VDC: 800mA
-12VDC: 120mA
+12VDC: 350mA
Watts(Max): 9.9W

TONE DIALING
DTMF digits 0 -9 ,* ,#, A, B, C, D
Frequency variation: less than 1 Hz
Rate: API programmable
Duration: API programmable

ANALOGIACK
Audio connector: 3.5mm headphone jack
Output impedance: 320hms
Output power: 50mW
Play volume: programmable

ECHO CANCELLATION
Input dynamicrange: G.165 compliant
Double-talk detection: G.165 compliant
End path delay: up to 128msec

SAFETY AND CERTIFICATIONS
Lightning: Level 4
Certificates: FCC & CE & AS/NZS CISPR
Emission: FCC Part 15 Class A & Class B
Emission: EN55022
Emission: AS/NZS CISPR 22:2004 Class B
Immunity: EN55044
Immunity: AS/NZS CISPR 24:2002

SHN & SHD & SHT

Combined in IP and PSTN networks

Synway's IP media processing architecture SHN, together with Synway's PSTN media processing and signaling hardware SHD, forms a complete, flexible, high performance turkey solution for VoIP applications developers who need to connect their service or applications to legacy PSTN networks. This combination brings highly scalable, flexible PSTN to IP transport and signaling functionality, standard PSTN trunks and NIC interfaces, and supports for SIP, H.323, SS7 (ISUP/TCAP/TUP/MTP), ISDN variants, CAS as well as a wide range of media processing capabilities. In addition, this evolutionary combination makes it easy and cost effective to offer SIP-based services to traditional telephony users, or connect traditional PSTN applications to IP telephony subscribers.

Synway's IP signaling and media processing technologies cater to ultimate demands of pure IP-based applications in the ever changeable environment. Synway's underlying thinking of product design is to make this ultimate IP-based demands and PSTN-based applications **CLOSELY INTERCONNECTED** as well as **COMPLETELY INDEPENDENT.** For that, application developers, by choosing Synway's IP and PSTN platforms, can not only resolve existing problems, but simply separate ultimate IP-based applications from hybrid IP and PSTN solutions when IP networks completely replace PSTN.

Synway's combined IP and PSTN media processing and signaling platform adapts unified application programming interface (API), which enables service providers and solution developers to migrate PSTN-based service to Synway's IP architectures or connect SIP-based service to PSTN networks rapidly and efficiently. Simplifying development and deployment efforts, Synway's SDK provides protocol-independent access to SIP, H.323, SS7 packets, most global ISDN variants, CAS, and support a variety of Windows and Linux operating systems.

In hybrid IP and PSTN networks, a new range of applications can be realized by Synway's combined IP and PSTN access technologies, such as gateway, hosted call center, IVR, prepaid card service, voice mail, faxmail, unified messaging, auto attendance, conferencing and more. Synway's IP and PSTN architectures provide service providers and applications developers with matchless cost advantage, powerful signaling protocols and multimedia resources in most demanding applications. With years of expertise of technical support service worldwide, Synway's engineers offer responsive and efficient development, deployment, and design support to help developers rapidly deliver sophisticated revenue-generating applications.

Reliability

At Synway, component and architectural reliability are an integral part of design. Built for the demanding central office environment, Synway's media processing and signaling architecture exceeds stringent standards of carrier-grade solutions in complex operator network. An array of high-capability, over-million subscribers' installations worldwide have proven Synway's Telco-grade stability since 1990s.

Designed for full redundancy, Synway's hardware includes all featured reliability, such as hot swappable, redundant SS7 connection, and enables upgrade without downtime plus full redundancy and operation protection. To ensure the highest availability, Synway continues to use advanced processing technologies, such as Direct Memory Processing (DMA), best-of-breed components such as TI DSP chipsets.

Scalability

Synway design gives telecom solution providers the ability to easily add more capacity when they need it, and makes carriers pay exactly for ports required instantly, and scale up more capacity for future as needed. This gives service providers full control over growth and ensures capital expenses are not tied up for non-revenue generation overcapacity. Synway's hardware can scale up to 1,920 ports (IP and/or TDM) and 96 SS7 links by simply adding components as needed. In multiple nodes, Synway's hardware can support boundless expansion.

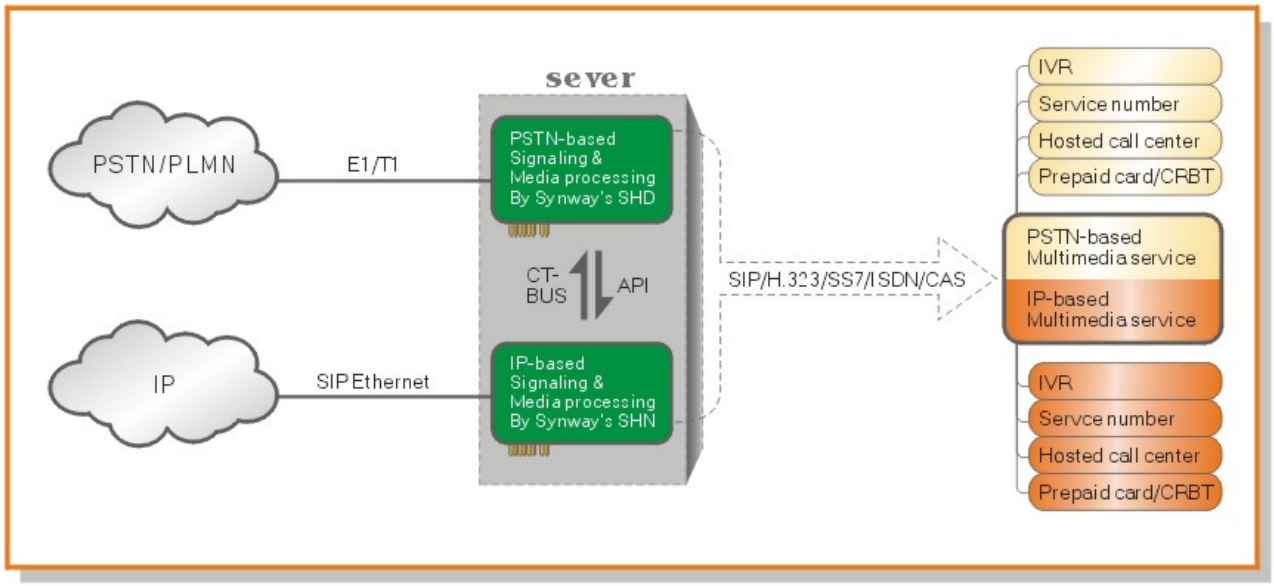
With Synway, a developer's initial investment is protected since all configurations use the same hardware and application interfaces and expansions are built on top of the existing system. With no upfront costs for unneeded hardware or software application, the platform grows as your traffic grows.

Application Directory

Multimedia Processing and Signaling Convergence in IP and PSTN networks

Synway leverages years of expertise in traditional and next-generation signaling and multimedia processing technologies to provide service provider and application developers with robust hardware components for gateway and media processing applications. Synway's architecture, combined together, evolutionally converge communications technologies for PSTN and IP networks and offer more features that traditional media gateway delivers, including a broader range of signaling technologies and powerful media processing capabilities.

Taking advantaging of Synway's components, Telco, enterprises and carriers can benefit from an array of combined sophisticated application platforms, not only gateway functionality from PSTN to IP through converting a variety of SS7 packets, ISDN variants and(or) CAS into SIP and(or) H.323 protocols, but rich media processing capabilities, including fax, compression, echo canceller, and conferencing used for IP gateway, media server, IVR, hosted call center, media streaming, conferencing, fax server and more. With this innovative convergence of IP and PSTN access technologies, service providers and applications developer can deliver matchless cost, function-rich, highly adaptive applications or services in single box to market more rapidly.

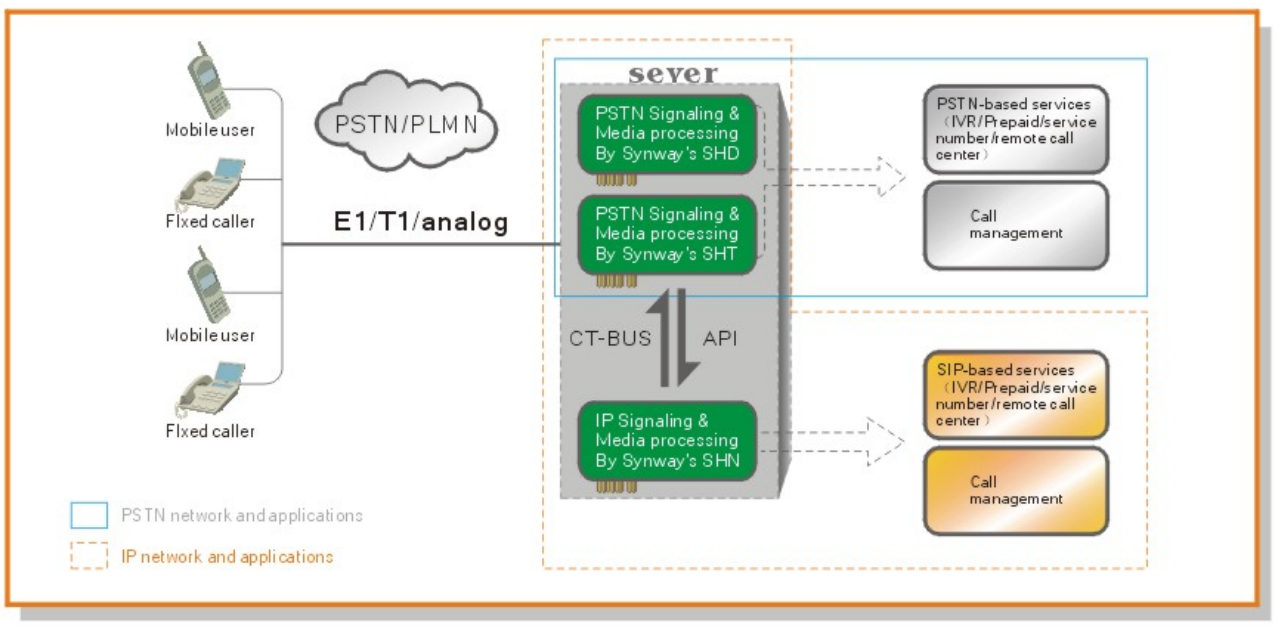


Call Center (Gateway Functionality) for Service Providers

IP-based call center application offers a lot of excitements for application developers and service providers, including shorter-time delivery of cost effective IP-based service, lower ownership and operation cost for subscribers, carriers, financial banks, enterprises and other users. Although PSTN networks and PSTN-based applications are still prevalent, more call center services or value-added applications have been increasingly architected upon new IP networks around the world. In many regions worldwide, hybrid IP and PSTN networks co-exist for maximum values of network infrastructure, so hybrid SIP-based and PSTN-based applications. How to balance between today's demands and uncertainties of next-generation has significant impact on behaviors of application developers, service providers and end users.

Not simply for general-purpose gateway functionality, Synway's IP media processing series, perfectly designed for pure IP network, leverages proven DSP algorithm to process media over IP networks, and minimizes hitting on hosted processing units. With high-compression G.729A, G.723*, GSM and more add-on compression protocols, Synway's IP media processing components enable voice, data and video data transmission and reception over Internet more efficiently.

All traditional PSTN-based call center services can be realized through Synway's IP media processing platform in IP networks. Service providers and applications developers can easily migrate their PSTN-based applications, empowered by Synway's mature PSTN products, to IP network as all Synway' IP and PSTN media processing architectures share a unified applications programming interface (API) and leverage equivalent advanced DSP technology.

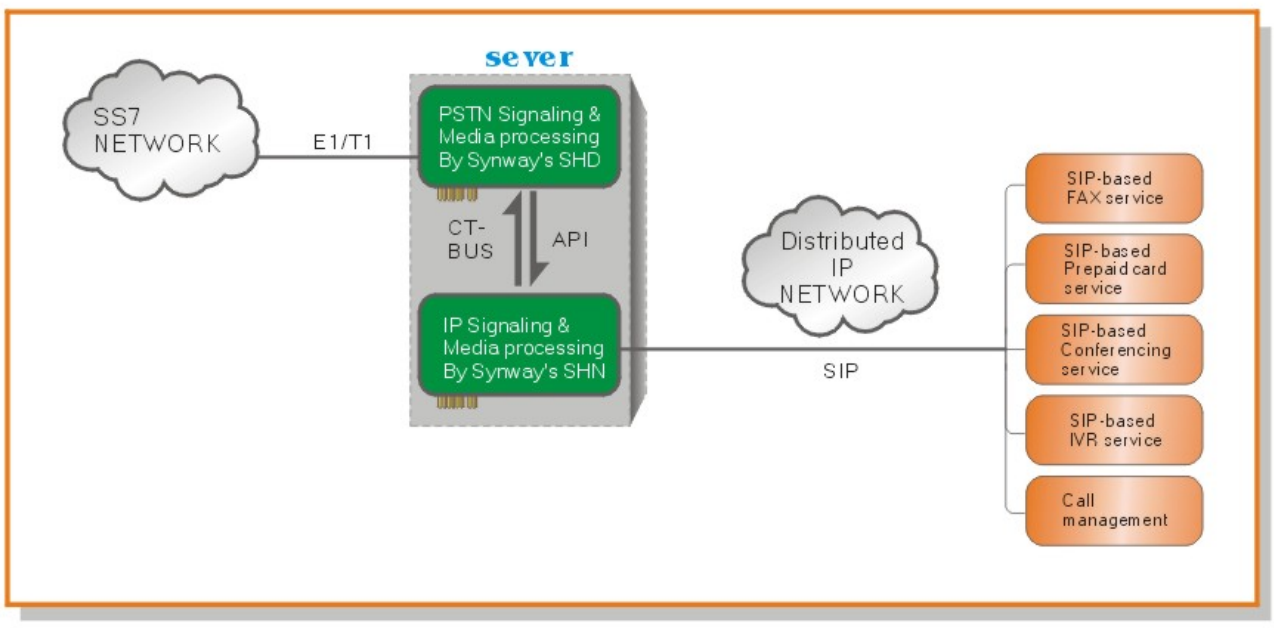


SS7-to-SIP interconnection

Synway's PSTN architecture combines media processing and SS7 packets (other signaling protocols available). **BUILT-IN SS7 CAPABILITY, NOT INDEPENDENT SS7 SERVER,** is an integrated part of Synway's proven, cost effective PSTN series, and can implement high-capacity (96 SS7 links), high-density (up to 64E1 per system) solutions. Using together with Synway's IP media processing products, service providers and applications developers can connect SIP-based service to SS7 network, and deliver high capacity, high performance, cost effective gateway functionality in the same box.

When deployed for SS7 to SIP interconnection, Synway's hardware platform with built-in SS7 capability delivers most signaling protocol variants otherwise available only by using a separate signaling server. Synway's SS7 technology enable developers and service providers to cost effectively offer , high-performance conferencing, prepaid card service, SMS, CRBT and more value-added services.

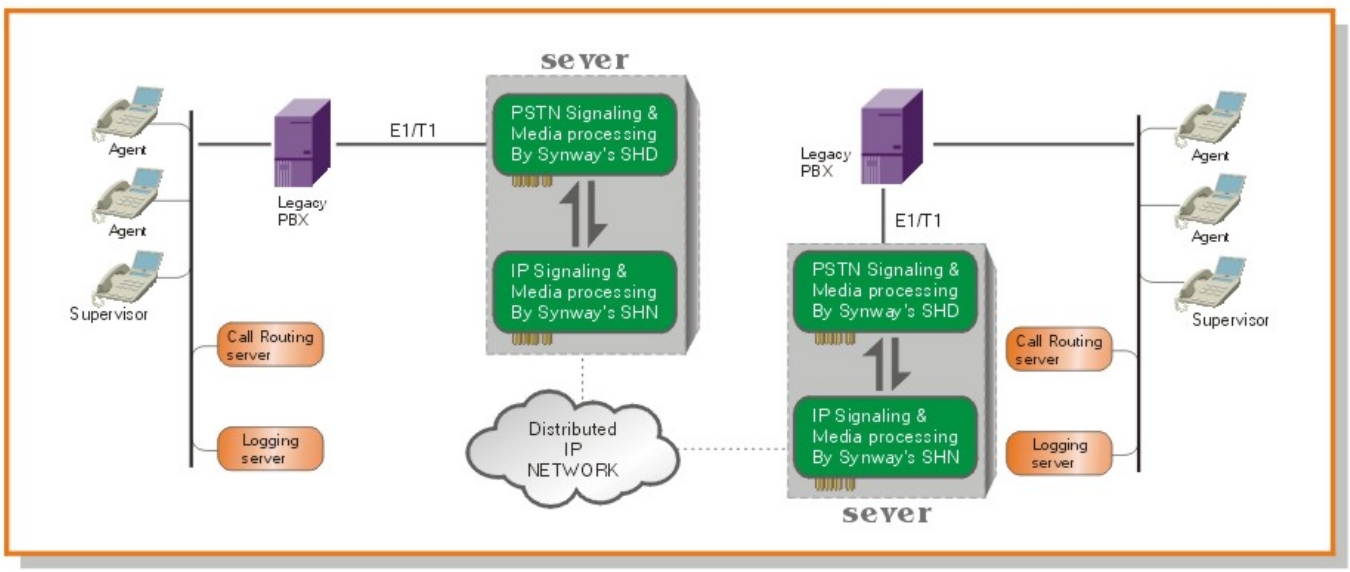
A free value-added signaling technology, on-board built-in SS7 signaling capability eliminates the need for independent SS7 server and specific SS7 components, immensely lowers ownership cost and simplifies system complexity for large-scale call center solution providers, telecom equipment provider (TEP) and carriers. All SS7 packets, including MTP1~3, ISUP, TUP and TCAP, originate from in-house development and high-performance field applications, and can be optimized for high-capacity, high performance telco applications. In addition, Synway's maximum value customization support can deliver customized features and embed an array of special resources, such as fax and conferencing for TEP and call center equipment providers. Synway's highly adaptive, high performance SS7 signaling technologies have been approved by operators and carriers from China, USA, India, Singapore, Pakistan, Canada and more.



Gateway and media processing for Multinational Enterprise

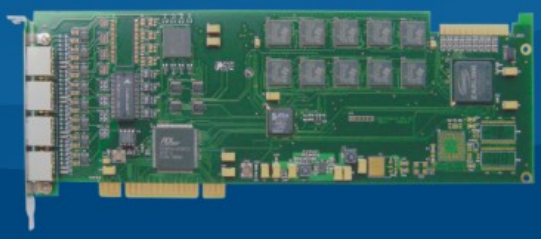
Utilizing Synway's IP and PSTN hardware platforms with unified API and SDK, developers or service providers can load SIP, SS7 ISDN PRI and CAS protocols in a box and simply migrate applications between IP and PSTN platforms. This convergence can act as an inter-working device or gateway between an IP-based network and legacy PBX. Usually, legacy PBX is a substantial infrastructure investment, and access to PSTN-based service is less cost effective.

To take full advantage of cost effective, feature-rich SIP-based services and expensive legacy PBX in IP and PSTN networks, evolutionary combination of Synway's IP and PSTN architectures is valuably practical. That makes communications more cost effective from IP phones to traditional phones, or from traditional phone to traditional phone (two gateways implemented on two end points). Interconnecting IP network with legacy PBX, Synway's IP and PSTN-based technologies save enterprise and telecom equipment manufactures (TEM), call center designer, or system integrators much cost of communications trunks.



Core Products

Passive Recording



DTP series

- High-impedance tap **E1/T1 LINES**, support 1/2/4* E1/T1 per board, RJ45 interface
- Support CAS/ISDN/SS7, and customized for signaling standards and protocols
- A range of Codecs including DSP-based GSM and G.729A based on DSP and DMA technologies

DST series

- High-impedance tap **DIGITAL STATION**, support 4~24 ports per board, modular design, RJ21 or RJ45 interface
- Support a major of PBX brands, and customized for PBXs and digital phoneset worldwide
- A range of Codecs including DSP-based GSM and G.729A based on DSP and DMA technologies

ATP series

- High-impedance tap **ANALOG LINES**, support 2 ~ 24 ports per board, RJ21 or RJ 45
- Support loopstart, modular design, and configurable for high density up to 256 ports
- A range of Codecs including DSP-based GSM and G.729A based on DSP and DMA technologies

Value Maximum Beyond Tomorrow

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Note: for information with asterisk*, please feel free to contact Synway.

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